

Notice of Allowability

Application No.

10/081,123

Examiner

Alicia Chevalier

Applicant(s)

RILEY, RICHARD E.

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed April 2, 2004.
2. ☒ The allowed claim(s) is/are 1-25.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 7/8/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Notice of Allowability

1. Claims 1-12 are directed to an allowable product. Pursuant to the procedures set forth in the Official Gazette notice dated March 26, 1996 (1184 O.G. 86), claims 13-25, directed to the process of making or using the patentable product, previously withdrawn from consideration as a result of a restriction requirement, are now subject to being rejoined. Claims 13-25 are hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Since all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, the restriction requirement made in the Office action mailed on May 15, 2003 is hereby withdrawn.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. Authorization for this examiner's amendment was given in a telephone interview with Michael Ananian on July 8, 2004.

Claim 1, line 1, deleted "for" and inserted -- in --.

Claim 1, line 2, deleted "of the type".

Claim 1, line 8, deleted "producing" and inserted -- produces --.

Claim 1, line 10, deleted "producing" and inserted -- produces --.

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Claim 1, line 13, deleted “for” and inserted -- in --.

Claim 1, line 16, deleted “but not” and inserted -- and --.

Claim 1, line 16, deleted “to significantly” and inserted -- without excessively --.

Claim 1, line 17, deleted “alter” and inserted -- altering the --.

Claim 1, line 18, deleted “for” and inserted -- in --.

Claim 1, line 19, deleted “but having a minor effect on” and inserted -- without degrading

--.

Claim 2, line 2, deleted “generally” and inserted -- substantially --.

Claim 2, lines 3-5, deleted “to form conductive metallic silver paths at said surface or through portions of the carbon plastic resistive matrix”.

Claim 2, line 5, deleted “tend to” and inserted -- excessively --.

Claim 3, lines 4-5, deleted “to form conductive metallic paths at said surface or through portions of the carbon plastic resistive matrix”.

Claim 3, line 6, deleted “tend to” and inserted -- excessively --.

Claim 4, lines 5-7, deleted “to form conductive metallic paths at said surface or through portions of the carbon plastic resistive matrix”.

Claim 4, line 7, deleted “tend to” and inserted -- excessively --.

Claim 7, line 1, deleted “for use”.

Claim 7, lines 1-2, deleted “of the type”.

Claim 7, line 8, deleted “producing” and inserted -- produces --.

Claim 7, line 10, deleted “producing” and inserted -- produces --.

Claim 7, line 11, deleted “for” and inserted -- in --.

Claim 7, line 13, deleted "but not" and inserted -- and --.

Claim 7, line 14, deleted "to significantly alter" and inserted -- without excessively altering the --.

Claim 13, line 2, deleted "for use" and inserted -- of claim 1 --.

Claim 13, line 2, deleted "of the type".

Claim 17, line 4, deleted "producing" and inserted -- produces --.

Claim 17, line 6, deleted "producing" and inserted -- produces --.

Claim 17, line 8, deleted "there from for" and inserted -- therefrom in --.

Claim 17, lines 10-11, deleted "but not" and inserted -- and --.

Claim 17, line 11, deleted "to significantly alter" and inserted -- without excessively altering the --.

Claim 19, lines 3-4, deleted "to form conductive metallic silver paths at said surface or through portions of the carbon plastic resistive matrix".

Claim 19, line 5, deleted "tend to" and inserted -- excessively --.

Claim 20, lines 4-5, deleted "to form conductive metallic paths at said surface or through portions of the carbon plastic resistive matrix".

Claim 20, line 5, deleted "tend to" and inserted -- excessively --.

REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance:

The base claims are: 1 and 7.

The closest prior art found is summarized below:

Chacko (U.S. Patent No. 6,228,288) discloses a conductive plastic resistance element having particles of conductive material with an average particle size in the range of about 0.1-10 microns embedded therein and projecting therefrom (*col. 2, lines 66 bridging col. 3, line 8 and col. 3, lines 40-52*). The conductive material consists of silver or carbon and is present in an amount equal to about 40-85 wt.% (*col. 3, lines 3-8*).

Chacko fails to teach or suggest the recited conductive plastic resistance element in a variable resistor having a wiper for movably contacting the resistance element to vary the resistance of the variable resistor. Specifically, Chacko fails to teach a resistance element comprising a substrate a carbon and plastic resistive matrix on the substrate and particles of conductive material no larger than about 6 microns formed in situ and embedded in a surface of the resistive matrix. Furthermore, Chacko doesn't teach that the carbon is a current carrying phase of the matrix wherein a higher percentage of carbon relative to the percentage of plastic in the resistive matrix produces a lower resistance and a lower percentage of carbon relative to the percentage of plastic in the resistive matrix produces a higher resistance. The particles are exposed and projecting from the surface in sliding contact with the wiper contact of the variable resistor. The particles form a conductive phase at the surface operative to reduce a contact resistance between the resistive element and the wiper and being present in sufficient amount within a volume of the layer without excessively altering the resistive properties of the resistive matrix.

Chan et al. (U.S. Patent No. 5,855,820) discloses a conductive plastic resistance element having particles of conductive material with a particle size in the range of about 1-30 microns embedded therein and projecting therefrom (*col. 1, lines 44 bridging col. 2, line 21*). The

conductive material consists of silver or carbon and is present in an amount equal to about 20-80 wt.% (*col. 1, lines 44-61*).

Chan fails to teach or suggest the recited conductive plastic resistance element in a variable resistor having a wiper for movably contacting the resistance element to vary the resistance of the variable resistor. Specifically, Chan fails to teach a resistance element comprising a substrate a carbon and plastic resistive matrix on the substrate and particles of conductive material no larger than about 6 microns formed in situ and embedded in a surface of the resistive matrix. Furthermore, Chan doesn't teach that the carbon is a current carrying phase of the matrix wherein a higher percentage of carbon relative to the percentage of plastic in the resistive matrix produces a lower resistance and a lower percentage of carbon relative to the percentage of plastic in the resistive matrix produces a higher resistance. The particles are exposed and projecting from the surface in sliding contact with the wiper contact of the variable resistor. The particles form a conductive phase at the surface operative to reduce a contact resistance between the resistive element and the wiper and being present in sufficient amount within a volume of the layer without excessively altering the resistive properties of the resistive matrix.

In sum, the prior art of record fails to teach or suggest a conductive plastic resistance element in a variable resistor having a wiper having all the features of the base claim(s).

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

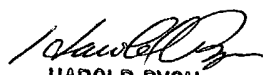
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ac

7/8/04




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SUPERVISORY PATENT EXAMINER
1772

7/12/04